UniFirst Corporation
Penobscot County
Bangor, Maine
A-644-71-F-A

Departmental
Findings of Fact and Order
Air Emission License
Amendment #1

FINDINGS OF FACT

After review of the air emissions license amendment application, staff investigation reports and other documents in the applicant's file in the Bureau of Air Quality, pursuant to 38 M.R.S.A., §344 and §590, the Maine Department of Environmental Protection (Department) finds the following facts:

I. REGISTRATION

A. Introduction

UniFirst Corporation (UniFirst) was issued Air Emission License A-644-71-E-R/A on October 1, 2012, permitting the operation of emission sources associated with their industrial laundry facility.

UniFirst has requested an amendment to their license in order to address emissions of VOC and HAP from the laundering of shop towels and to add Dryer #3.

The equipment addressed in this license is located at 70 Godsoe Road, Bangor, Maine.

B. Emission Equipment

The following new equipment is addressed in this air emission license:

Process Equipment

Equipment	Maximum Capacity (MMBtu/hr)	Maximum Firing Rate	Fuel Type	Pollution Control Equipment
Dryer #3	3.0	2900 scf/hr	Natural Gas	Lint trap

C. Application Classification

The modification of a minor source is considered a major or minor modification based on whether or not expected emission increases exceed the "Significant Emission Levels" as defined in the Department's regulations. The emission increases are determined by subtracting the current licensed emissions preceding the modification from the maximum future licensed allowed emissions, as follows:

Pollutant	Current License (TPY)	Future License (TPY)	Net Change (TPY)	Sig. Level
PM	5.0	7.0	+2.0	100
PM_{10}	5.0	7.0	+2.0	100
SO_2	5.3	5.4	+0.1	100
NO_x	9.8	12.7	+2.9	100
CO	8.3	9.6	+1.3	100
VOC	0.5	10.3	+9.8	50

This modification is determined to be a minor modification and has been processed as such.

II. BEST PRACTICAL TREATMENT (BPT)

A. Introduction

In order to receive a license, the applicant must control emissions from each unit to a level considered by the Department to represent Best Practical Treatment (BPT), as defined in *Definitions Regulation*, 06-096 CMR 100 (as amended). Separate control requirement categories exist for new and existing equipment as well as for those sources located in designated non-attainment areas.

BPT for new sources and modifications requires a demonstration that emissions are receiving Best Available Control Technology (BACT), as defined in *Definitions Regulation*, 06-096 CMR 100 (as amended). BACT is a top-down approach to selecting air emission controls considering economic, environmental and energy impacts.

BPT for existing emissions equipment means that method which controls or reduces emissions to the lowest possible level considering:

- the existing state of technology;
- the effectiveness of available alternatives for reducing emissions from the source being considered; and
- the economic feasibility for the type of establishment involved.

B. VOC and HAP Emissions from Shop Towels

UniFirst operates a commercial laundry that handles, among other items, shop towels. At the request of the U.S. Environmental Protection Agency (USEPA), UniFirst performed emissions testing in December 2012. The results from this testing have been used to establish site-specific emission factors for the laundering of shop towels and proposed facility-wide VOC and HAP emission limits.

General operations at UniFirst include receiving, sorting, washing, and drying as well as treatment of the wastewater produced. Some of these operations are point sources of emissions while others are fugitive emission sources. UniFirst developed VOC and HAP (both total and highest single) emission factors for shop towels that encompass emissions from all steps of the laundering process. The highest single HAP emission factor is for tetrachloroethylene. The emission factors are as follows:

VOC	0.0083 lb/lb soiled towels
Total HAP	0.0015 lb/lb soiled towels
Single HAP	0.00027 lb/lb soiled towels

UniFirst performed a BPT analysis for emissions of VOC and HAP from the laundering of shop towels. In this analysis UniFirst reviewed information from USEPA's RACT/BACT/LAER Clearinghouse but found no prior relevant determinations from similar facilities.

UniFirst also reviewed permit documentation for other commercial/industrial laundering operations nationwide. The only add-on control technology found were determined to be specific to the laundering of print towels which has a significantly higher VOC content. UniFirst does not launder print towels at its facility.

Based on the analysis performed, UniFirst has proposed BPT for the laundering of shop towels to be an annual throughput limit (based on a calendar year) of 2,300,000 lbs of soiled towels. This limit corresponds to the following annual emissions:

VOC	9.6 tpy
Total HAP	1.7 tpy
Single HAP	0.3 tpy

C. Dryer #3

UniFirst operates two industrial laundry dryers, each rated at 3.0 MMBtu/hr and designed to process 900 pounds of laundry per cycle. UniFirst wishes to install a third natural gas-fired dryer (Dryer #3) identical to Dryers #1 and #2.

1. BACT Findings

The BACT emission limits for Dryer #3 were based on the following:

PM/PM_{10}	–	0.05 lb/MMBtu based on 06-096 CMR 115, BACT
SO_2	–	0.6 lb/MMscf based on AP-42, Table 1.4-2, dated 7/98
NO_x	–	100 lb/MMscf based on AP-42, Table 1.4-1, dated 7/98
CO	–	84 lb/MMscf based on AP-42, Table 1.4-1, dated 7/98
VOC	–	5.5 lb/MMscf based on AP-42, Table 1.4-2, dated 7/98
Opacity	–	Visible emissions from Dryer #3 shall not exceed 10% opacity on a 6 minute block average, except for no more than one (1), six (6) minute block average in a continuous 3 hour period.

The BACT emission limits for Dryer #3 are the following:

Unit	PM (lb/hr)	PM_{10} (lb/hr)	SO_2 (lb/hr)	NO_x (lb/hr)	CO (lb/hr)	VOC (lb/hr)
Dryers #3 (3.0 MMBtu/hr) ***nat'l gas***	0.15	0.15	neg	0.29	0.25	0.02

D. Annual Emissions

1. Total Annual Emissions

UniFirst shall be restricted to the following annual emissions, based on a calendar year total. The tons per year limits were calculated based on:

- Combustion of 150,000 gallons of #2 fuel oil with a maximum sulfur content of 0.5% by weight.
- Natural gas combustion in each of the gas-fired units up to 8760 hr/yr.
- Processing of 2,300,000 lbs per year of soiled shop towels

Total Licensed Annual Emissions for the Facility
Tons/year
(used to calculate the annual license fee)

	PM	PM_{10}	SO_2	NO_x	CO	VOC	HAP (Single/Total)
Boilers #1 & #2 (#2 fuel oil)	1.3	1.3	5.3	1.8	0.4	0.1	–
Boilers #1 & #2 (natural gas)	3.7	3.7	0.1	7.1	6.0	0.4	–
Dryers	2.0	2.0	neg	3.8	3.2	0.2	
Shop Towels	–	–	–	–	–	9.6	0.3 / 1.7
Total TPY	**7.0**	**7.0**	**5.4**	**12.7**	**9.6**	**10.3**	**0.3 / 1.7**

2. Greenhouse Gases

Greenhouse gases are considered regulated pollutants as of January 2, 2011, through 'Tailoring' revisions made to EPA's *Approval and Promulgation of Implementation Plans,* 40 CFR Part 52, Subpart A, §52.21 Prevention of Significant Deterioration of Air Quality rule. Greenhouse gases, as defined in 06-096 CMR 100 (as amended), are the aggregate group of the following gases: Carbon dioxide, nitrous oxide, methane, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. For licensing purposes, greenhouse gases (GHG) are calculated and reported as carbon dioxide equivalents (CO_2e).

Based on the facility's fuel use limit(s), the worst case emission factors from AP-42, IPCC (Intergovernmental Panel on Climate Change), and *Mandatory Greenhouse Gas Reporting*, 40 CFR Part 98, and the global warming potentials contained in 40 CFR Part 98, UniFirst is below the major source threshold of 100,000 tons of CO_2e per year. Therefore, no additional licensing requirements are needed to address GHG emissions at this time.

III. AMBIENT AIR QUALITY ANALYSIS

The level of ambient air quality impact modeling required for a minor source shall be determined by the Department on a case-by case basis. In accordance with 06-096 CMR 115, an ambient air quality impact analysis is not required for a minor source if the total emissions of any pollutant released do not exceed the following levels and there are no extenuating circumstances:

Pollutant	Tons/Year
PM_{10}	25
SO_2	50
NO_x	50
CO	250

The total facility licensed emissions are below the emission levels contained in the table above and there are no extenuating circumstances; therefore, an ambient air quality impact analysis is not required as part of this license.

ORDER

Based on the above Findings and subject to conditions listed below, the Department concludes that the emissions from this source:

- will receive Best Practical Treatment,
- will not violate applicable emission standards, and
- will not violate applicable ambient air quality standards in conjunction with emissions from other sources.

The Department hereby grants Air Emission License A-644-71-F-A subject to the conditions found in Air Emission License A-644-71-E-R/A and in the following conditions.

Severability. The invalidity or unenforceability of any provision, or part thereof, of this License shall not affect the remainder of the provision or any other provisions. This License shall be construed and enforced in all respects as if such invalid or unenforceable provision or part thereof had been omitted.

The following shall replace Condition (17) of Air Emission License A-644-71-E-R/A:

(17) **Dryers**

A. Emissions shall not exceed the following:

Emission Unit	Pollutant	lb/MMBtu	Origin and Authority
Dryer #1	PM	0.05	06-096 CMR 115, BPT
Dryer #2	PM	0.05	06-096 CMR 115, BPT
Dryer #3	PM	0.05	06-096 CMR 115, BACT

B. Emissions shall not exceed the following [06-096 CMR 115, BPT/BACT]:

Emission Unit	PM (lb/hr)	PM_{10} (lb/hr)	SO_2 (lb/hr)	NO_x (lb/hr)	CO (lb/hr)	VOC (lb/hr)
Dryer #1	0.15	0.15	neg	0.29	0.25	0.02
Dryer #2	0.15	0.15	neg	0.29	0.25	0.02
Dryer #3	0.15	0.15	neg	0.29	0.25	0.02

C. Visible emissions from each dryer shall not exceed 10% opacity on a six (6) minute block average basis, except for no more than one (1), six (6) minute block average in a 3-hour period. [06-096 CMR 101]

The following are New Conditions:

(21) UniFirst shall not exceed the processing of 2,300,000 lbs of soiled shop towels annually based on a 12-month rolling total. Compliance shall be demonstrated by records of shop towels received kept on a monthly and calendar year basis. [06-096 CMR 115, BACT]

DONE AND DATED IN AUGUSTA, MAINE THIS 19 DAY OF June , 2013.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

BY: Marc Allen Robert Core for
PATRICIA W. AHO, COMMISSIONER

The term of this amendment shall be concurrent with the term of Air Emission License A-644-71-E-R/A.

PLEASE NOTE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES

Date of initial receipt of application: 5/20/13
Date of application acceptance: 5/22/13

Date filed with the Board of Environmental Protection:

This Order prepared by Lynn Poland, Bureau of Air Quality.

Filed
JUN 20 2013
State of Maine
Board of Environmental Protection